

Notice of Allowability

Application No.

09/916,088

Examiner

Scott L. Jarrett

Applicant(s)

CHAPPEL ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/1/2006.
2. ☒ The allowed claim(s) is/are 34-62.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 10/23/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview(s) with Mr. Ross Robinson on October 31, 2006 and November 1, 2006.

The application has been amended as follows:

Title:

System and Method for Managing a Project Based on Team Member
Interdependency and Impact Relationships

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in this application.

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Listing of Claims:

1-33. (CANCELED)

34. (NEW) A computer-network-based development-project-management method comprising:

- receiving data indicative of a temporal relationship between a first and a second project team member relative to work comprising modification of at least one artifact of the development project;

- receiving data indicative of an amount of work performed on the at least one artifact by the second team member as a result of work performed by the first team member on the at least one artifact;

- wherein the work performed by the second team member comprises modification of the at least one artifact;

- performing regression analysis on the data indicative of the temporal relationship to form at least one metric representative of the strength of an interdependency relationship between the first and second project team members;

- wherein the interdependency relationship is formed as the second project team member performs work that is required due to work performed on the at least one artifact by the first project team member;

- performing regression analysis on the data indicative of the amount of work performed to form at least one metric representative of an impact relationship between the first and second project team members;

- wherein the at least one metric representative of the impact relationship is indicative of the amount of work performed by the second project team member as a result of work performed by the first team member on the at least one artifact;

- storing the at least one metric representative of the interdependency relationship and the at least one metric representative of the impact relationship;

- wherein the steps of receiving data, performing regression analysis, and storing the at least one metric representative of the interdependency relationship and the at least one metric representative of the impact relationship are performed over the computer network;

- outputting data based at least in part on the at least one metric representative of the interdependency relationship and the at least one metric representative of the impact relationship; and

- performing a development-project task based at least in part on the output data.

35. (NEW) The method according to claim 34, further comprising collecting data indicative of modifying the at least one artifact of the development project by the first and second project team members, the data including a time-stamp.

36. (NEW) The method according to claim 34, wherein the at least one artifact comprises at least one of a data element and a data file.

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37. (NEW) The method according to claim 34, wherein the at least one metric representative of the interdependency relationship comprises at least one of the following:

a correlation coefficient, a slope, and an intercept.

38. (NEW) The method according to claim 34, further comprising forming a series of the at least one metric representative of the strength of the interdependency relationship.

39. (NEW) The method according to claim 38, wherein the step of forming the series comprises repeating at predetermined, random, or pseudo-random time periods the steps of receiving, performing regression analysis, and storing.

40. (NEW) The method according to claim 38, further comprising outputting the series of metrics.

41. (NEW) The method according to claim 34, wherein the outputting step comprises generating a human legible alphanumeric description of the at least one metric representative of the strength of the interdependency relationship and the at least one metric representative of the impact relationship.

42. (NEW) A computer-network-based development-project-management system comprising:

a data collector component associated with the development project and operable to collect data indicative of a temporal relationship between a first project team member and a second project team member relative to work comprising modification of at least one artifact and an amount of work performed on the at least one artifact by the second team member as a result of work performed by the first team member on the at least one artifact;

a statistics analyzer component for performing a regression analysis on the collected data to form:

at least one metric representative of the strength of an interdependency relationship between the first and second project team members; and

at least one metric representative of an impact relationship between the first and second project team members;

a data repository for storing the at least one metric representative of the strength of the interdependency relationship and the at least one metric representative of the impact relationship;

wherein the interdependency relationship is formed as the second project team member performs work that is required due to work performed on the at least one artifact by the first project team member;

wherein the at least one metric representative of the impact relationship is indicative of the amount of work performed by the second project team member as a result of work performed by the first team member on the at least one artifact;

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outputting data based at least in part on the at least one metric representative of the interdependency relationship and the at least one metric representative of the impact relationship; and

performing a development-project task based at least in part on the output data.

43. (NEW) The system according to claim 42, wherein the collected data comprises time-stamps identifying at least one artifact-modification time.

44. (NEW) The system according to claim 42, wherein the at least one artifact comprises at least one of a data object and a data file.

45. (NEW) The system according to claim 42, wherein at least one of the at least one metric representative of the strength of the interdependency relationship and the at least one metric representative of the impact relationship comprises a correlation coefficient.

46. (NEW) The system according to claim 42, wherein the data repository is operable to store a series of the at least one metric representative of the strength of the interdependency relationship and a series of the at least one metric representative of the impact relationship.

47. (NEW) A computer-network-based method of analyzing an interdependency relationship between a first and a second person working on at least one artifact, the method comprising:

tracking modifications to the at least one artifact by the first and second person;

storing parameters associated with the modifications to the at least one artifact by the first and second persons;

performing at least one regression analysis based on the stored parameters;

wherein the at least one regression analysis generates:

at least one metric representative of the strength of a characteristic of an interdependency relationship between the first and second persons; and

at least one metric representative of an impact relationship between the first and second project team members;

wherein the interdependency relationship is formed as the second project team member performs work that is required due to work performed on the at least one artifact by the first project team member;

wherein the at least one metric representative of the impact relationship is indicative of the amount of work performed by the second project team member as a result of work performed by the first team member on the at least one artifact;

wherein the steps of tracking modifications, storing parameters, and performing the at least one regression analysis are performed over a computer network;

outputting data based at least in part on the at least one metric representative of the interdependency relationship and the at least one metric representative of the impact relationship; and

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performing a management task based at least in part on the output data.

48. (NEW) The method according to claim 47, wherein the parameters comprise time-stamps identifying times of modifications to the at least one artifact by the first and second persons.

49. (NEW) The method according to claim 47, wherein the at least one artifact is associated with a development project.

50. (NEW) The method according to claim 47, wherein the parameters are stored in a table.

51. (NEW) The method according to claim 50, wherein the table is a hash table.

52. (NEW) The method according to claim 50, wherein the table comprises at least one key associated with each of the at least one artifact.

53. (NEW) The method according to claim 50, wherein the at least one artifact comprises at least one of a data object and a data file.

54. (NEW) The method according to claim 47, wherein the computer network comprises at least one of the following: a local area network, a wide area network, and the Internet.

55. (NEW) A computer-readable medium having stored thereon sequences of instructions, the sequences of instructions including instructions, when executed by a processor, causes the processor to:

receive data indicative of a temporal relationship between a first and a second project team member relative to work comprising modification of at least one artifact of the development project;

receive data indicative of an amount of work performed on the at least one artifact by the second team member as a result of work performed by the first team member on the at least one artifact;

wherein the work performed by the second team member comprises modification of the at least one artifact;

perform regression analysis on the data indicative of the temporal relationship to form at least one metric representative of the strength of an interdependency relationship between the first and second project team members;

wherein the interdependency relationship is formed as the second project team member performs work that is required due to work performed on the at least one artifact by the first project team member;

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perform regression analysis on the data indicative of the amount of work performed to form at least one metric representative of an impact relationship between the first and second project team members;

wherein the at least one metric representative of the impact relationship is indicative of the amount of work performed by the second project team member as a result of work performed by the first team member on the at least one artifact;

store the at least one metric representative of the interdependency relationship and the at least one metric representative of the impact relationship;

wherein the steps of receiving data, performing regression analysis, and storing the at least one metric representative of the interdependency relationship and the at least one metric representative of the impact relationship are performed over the computer network;

output data based at least in part on the at least one metric representative of the interdependency relationship and the at least one metric representative of the impact relationship; and

perform a development-project task based at least in part on the output data.

56. (NEW) The computer-readable medium according to claim 55, further comprising instructions that cause the processor to collect data indicative of modifying the at least one artifact of the development project by the first and second project team members, the data including a time-stamp.

57. (NEW) The computer-readable medium according to claim 55, wherein the at least one artifact comprises at least one of a data element and a data file.

58. (NEW) The computer-readable medium according to claim 55, wherein the at least one metric representative of the interdependency relationship comprises at least one of the following:

a correlation coefficient, a slope, and an intercept.

59. (NEW) The computer-readable medium according to claim 55, further comprising instructions that cause the processor to form a series of the at least one metric representative of the strength of the interdependency relationship.

60. (NEW) The computer-readable medium according to claim 59, wherein the instructions that cause the processor to form the series comprise instructions that cause the processor to repeat at predetermined, random, or pseudo-random time periods receiving, performing regression analysis, and storing.

61. (NEW) The computer-readable medium according to claim 59, further comprising instructions that cause the processor to output the series of metrics.

62. (NEW) The computer-readable medium according to claim 55, wherein the instructions that cause the processor to output step comprise instructions that cause the

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processor to generate a human legible alphanumeric description of the at least one metric representative of the strength of the interdependency relationship and the at least one metric representative of the impact relationship.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance.

The present invention is directed to a system and method for managing development projects based on interdependency and impact relationships between first and second project team members wherein the metrics are the result of a regression analysis on data indicative of temporal modifications made by the first and second team project members to development project artifacts.

The closest prior art Simmons et al., Puittinen et al. and Dependency Structure Matrix (DSM), fail to teach or suggest either singularly or in combination utilizing regression analysis of development project artifact modification data to form *both* an *interdependency metric* representative of the strength of an *interdependency relationship* between first and second team members, formed as the second project team member performs work *that is required* due to work performed on the development project artifact by the first project team member (Specification: Line 15, Page 3), and an *impact metric* representative of an impact relationship between first and second project team members, the impact relationship being indicative of the *amount of work* performed by the second project team member *as a result of work performed by the first team* member on the development project artifact (Specification: Line 15, Page 10; Lines 11-15, Page 12; Figure 6) and performing a project management task based at least in part on both the interdependency and impact relationship metrics as recited in independent claims 34, 42, 47 and 55.

Puittnen et al., Measuring and visualizing information transfer in networked collaborations (Cern/TuovliWDM) teaches a project management system and method wherein the system generates and analyzes data indicative of temporal relationships between development team members based on their access to and modification of project artifacts, generates a metric characteristic of the strength of an interdependency relationship between project members and utilizes the data indicative of the temporal relationships between project members to perform at least one project management task; however Puittnen et al. does not expressly teach that the interdependency relationships between team members are generated utilizing regression analysis, forming an impact metric or performing a project management task based at least in part on both an interdependency and impact metric as recited in independent claims 34, 42, 47 and 55.

Simmons et al., Software Measurement: A Visualization Toolkit (PAMPA, Hewlett Packard) teaches a development project management system and method wherein the system receives and analyzes temporal data related to the level of work of a plurality of project team members, including but not limited to modifications made to project artifacts, and outputs data to assist the project manager perform at least one development project management task, based at least in part on the analysis of the artifact modification data. Simmons et al. does not teach forming metrics characteristic of interdependency and impact relationships a first and second project team members

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or performing a project management task based at least in part on interdependency and impact metrics as recited in independent claims 34, 42, 47 and 55.

Dependency Structure Matrix (DSM, Dependency Structure Method, Design Structure Matrix) as evidenced by at least: Morelli et al., Predicting Technical Communication in Product Development Organizations (1995; Introduction, Pages 217-218) and McCord et al., Managing the Integration Problem in Concurrent Engineering (1993; Pages 7, 9, 11, 19-21, 25; Figures 4.3, 4.4), is a well known technique used to model complex systems in systems engineering/analysis and project planning/management wherein a dependency structure matrix lists all constituent subsystems/activities and the corresponding information exchange and dependency patterns between project elements including but not limited to team members. DSM further teaches forming a metric indicative of the strength of interdependency between two or more project team members, tasks and/or systems and performing at least one project management task based on the interdependency relationship; however DSM does not expressly teach forming, via regression analysis, an impact metric between a first and second project team member or performing a project management task based at least in part of an interdependency and impact metrics between a first and second project team members as recited in independent claims 34, 42, 47 and 55.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Richard, Tucker, An assessment tool for improving project team communications (1996), teaches a network based project management system and method (diagnostic tool) used to assess project team's communications based on the collection and statistical analysis of project communications (Pages 4-5, 29-33, 35-37, 54-56).
- Sosa et al., Understanding the Effects of Product Architecture on Technical Communication in Product Development Organizations (2000) teach a method for analyzing development team interactions (communication/social network analysis) which generates a metric on the intensity of team member interactions (Section 2.2, Pages 9-10; Figures 4, 5).
- Allen, Thomas, Architecture and Communication among Product Development Engineers (2000) teaches several well known research studies into project development team member communications wherein the interactions are indicative of the strength of the interdependency/working relationships between the team members.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



SJ

11/8/2006



TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600